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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/901,004	07/10/2001	Yukihiro Yoshimine	P107336-00025	7630

7590 06/10/2002

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EXAMINER

MUTSCHLER, BRIAN L

ART UNIT	PAPER NUMBER
1753	

DATE MAILED: 06/10/2002

4

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application N .	Applicant(s)
	09/901,004	YOSHIMINE ET AL.
	Examiner	Art Unit
	Brian L. Mutschler	1753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.  
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.  
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.  
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).  
 - Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) Responsive to communication(s) filed on \_\_\_\_\_.

2a) This action is FINAL.                            2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) Claim(s) 1-9 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-9 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 01 July 2001 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
 If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
 \* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
 a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>3</u> .	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____. 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) 6) <input type="checkbox"/> Other: _____.
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## DETAILED ACTION

### *Drawings*

1. Figures 10, 11, 12 and 13 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### *Specification*

2. The disclosure is objected to because of the following informalities:

- a. On page 1 at line 13, "such the" should be changed to "a";
- b. On page 3 at line 23, "Such the" should be changed to "Such a";
- c. On page 12 at line 14, "Such the" should be changed to "Such a";
- d. On page 13 at line 3, "is same" should be changed to "is the same";
- e. On page 15 at line 15, "Such the films" should be changed to "Such films";
- f. On page 15 at line 23, "shift the positions" should be changed to "shift positions";
- g. On page 16 at line 12, "such the material" should be changed to "such a material";
- h. On page 16 at line 13, "and" should be deleted;
- i. On page 16 at line 19, "with" should be deleted;

- j. On page 19 at line 11, "by any ways" should be changed to "in many ways";
- k. On page 21 at line 1, "Such the films" should be changed to "Such films";
- l. On page 21 at line 9, "such the material" should be changed to "such a material";
- m. On page 21 at line 16, "with" should be deleted; and
- n. On page 22 at line 13, "or" should be inserted before "PVDF".

Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 112***

- 3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

- 4. Claims 3, 4, and 6-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 3 and 4 at line 3, the phrase "small heat shrinkage rate" is indefinite because "small" is a relative term and does not clearly define the heat shrinkage rate encompassed by the instant invention. The same applies to dependent claim 6.

Claim 7 recites the limitation "the solar cells" in lines 3 to 4. There is insufficient antecedent basis for this limitation in the claim. The phrase should be changed to "the solar cell".

Claim 8 recites the limitations "the solar cells" and "the cells" in line 5. There is insufficient antecedent basis for these limitations in the claim. The phrases should both be changed to "the solar cell". The same applies to dependent claim 9.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 3, 5 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Komori et al. (EP 0 829 909 A2).

Komori et al. disclose a solar cell module having a front surface protecting layer 104 and a rear surface protecting layer 107, and an insulating resin film 106 and a solar cell 101 sealed by a sealing resin 103 (fig. 1B). The resin film 106 is smaller in size than the front and rear surface protecting layers 104 and 107 (p. 6, lines 45-55).

Regarding claim 3, the resin film 106 has "long-term durability...against thermal expansion and thermal shrinkage" (p. 6, line 50).

Regarding claim 5, the insulating resin film 106 is "disposed so as not to be present at the bending portion of the substrate" and is smaller in size than the protective layers 104 and 107 (p. 6, lines 46-47; fig. 1B).

Regarding claim 6, Komori et al. disclose a specific example, wherein the front surface protective layer 404 was larger than the solar cell block by 90 mm on each side,

the insulating resin film **407** was larger than the solar cell block by 15 mm on each side, and the rear surface protective layer **408** was larger than the solar cell block by 80 mm on each side (p. 10, lines 2-13). Therefore, the insulating resin film **407** was no more than 65 mm from the edges of the front and rear surface protective layers and was larger than the solar cell block.

Since Komori et al. teach the limitations recited in the instant claims, the reference is deemed to be anticipatory.

7. Claims 1, 3 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Kataoka et al. (U.S. Pat. No. 6,307,145).

Kataoka et al. disclose a solar cell having a front surface protective layer **103**, a rear surface protective layer **107**, and a solar cell **101** and resin films **105** and **108** sealed by sealing resin **102** and **104** (fig. 1B). The resin films **105** and **108** are smaller than the front and rear surface protective layers **103** and **107** (fig. 1B).

Regarding claim 3, the resin films **105** and **108** are resistant to thermal expansion and thermal contraction and can be cross-linked to enhance heat resistance (col. 8, lines 36-39; col. 11, lines 1-4).

Regarding claim 5, the resin films **105** and **108** are smaller than the overlaying area of the front and back surface protective layers **103** and **107** (fig. 1B).

Since Kataoka et al. teach the limitations recited in the instant claims, the reference is deemed to be anticipatory.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 2, 4 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komori et al. (EP 0 829 909 A2) in view of admissions made in the disclosure of the instant application.

Komori et al. disclose a solar cell module having the limitations recited in claims 1, 3, 5 and 6 of the instant invention, as explained above in paragraph 6. Komori et al. further disclose the use of a glass front surface protective layer **104** and a resin film rear surface protective layer **107** (p. 5, line 58; p. 7, line 16). Regarding claim 4, Komori et al. disclose the use of a rear surface protective layer **107** having excellent weather resistance (p. 7, line 10). However, Komori et al. differs from the instant invention because Komori et al. do not disclose the use of a *transparent* resin film as the rear surface protective layer, as recited in claim 2, and the formation of the resin film between the front surface protective layer and the solar cells, as recited in claim 7.

In the disclosure of the instant application, it was disclosed that it is known in the art to use a solar cell module capable of receiving light from both the front and the back surfaces of the module by using a glass front surface protective layer **100** and a rear surface protective member comprising a transparent resin film **110** (p. 1, line 17 to p. 2, line 8).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the solar cell module of Komori et al. to use a transparent rear surface protective layer as disclosed in the instant application as prior art because using a transparent rear surface protective layer would allow the solar cell to absorb light through both the front and rear surfaces of the solar cell module.

Regarding claim 7, the instant application identifies the use of resin films between the front surface and the solar cell as prior art (p. 2, lines 10-19; fig. 12).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the solar cell module of Komori et al. to use a resin film between the front surface protective layer and the solar cell, as identified by the instant application as prior art, because using a resin film between the front surface protective layer and the solar cell helps "prevent elution and diffusion of alkaline component from the glass plate" (p. 2, lines 18-19).

10. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komori et al. (EP 0 829 909 A2).

Komori et al. disclose a solar cell module having the limitations recited in claims 1, 3, 5 and 6 of the instant invention, as explained above in paragraph 6. Komori et al. further disclose the use of a glass front surface protective layer **104** and a steel sheet rear surface protective layer **107** (p. 5, line 58; p. 7, line 5). The resin film **106** extends beyond the edges of the solar cell block **101** but does not reach the edges of the

surface protective layers 104 and 107 (fig. 1B). The insulating resin film 106 "ensures a sufficient electrical insulation of the electroconductive substrate" (p. 6, lines 49-50). Furthermore, Komori et al. show the use of connectors 306 connecting adjacent solar cells 301, all encapsulated within a sealing resin 302 (fig. 3).

The solar cell module of Komori et al. differs from the instant invention because Komori et al. do not disclose the use of wiring, as recited in claim 8, and the use of insulating tape covering the wiring, as recited in claim 9.

— However, wires and connectors, such as those disclosed by Komori et al. are equivalent because they perform in exactly the same manner, i.e. conducting electricity from one device to another through the use of a thin electrically-conductive material. It is also well known to use insulating tape to cover exposed wiring in electrical applications to prevent short-circuiting and also to protect against electrical shock. For example, electrical tape is extensively used by electricians and others making electrical connections because it offers a simple and efficient means of insulating exposed conductors.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the solar cell module of Komori et al. to use wiring and to cover the wiring with insulating tape because it is well known in the art of solar cells and the field of electrical devices to use wiring and insulating tape in electrical connections because it provides simple and efficient means for connecting electrical devices.

***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Pat. No. 6,034,323 issued to Yamada et al. and U.S. Pat. No. 6,323,416 issued to Komori et al. disclose resin film layers that do not extend to the edges of the surface protective layers.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian L. Mutschler whose telephone number is (703) 305-0180. The examiner can normally be reached on Monday-Friday from 8:00am to 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (703) 308-3322. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



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June 7, 2002